

WHAT IS CLAIMED IS:

1. An electrical connector for making an electrical connection to an electrical conductor sheathed by an insulative covering, the connector comprising:

a body defining a recess for receiving an insulated portion of the electrical conductor; and

electrical contact means movably connected to said body in a direction substantially perpendicular to a longitudinal axis of the conductor when said conductor is positioned in said recess, said contact means having an end portion adapted to displace the insulative covering of said portion of the insulated conductor and make an electrical connection with said conductor upon movement of said electrical contact means into contact with the insulative covering, said recess having knife edged protrusion means for insulation displacement and electrical connection on a side of the electrical conductor substantially opposite to said contact means, said body being electrically conductive and said knife edged protrusions means being formed integrally with said body, said electrical contact means being electrically connected to said conductive body.

2. An electrical connector as claimed in claim 1, wherein:

said recess is formed as one of a substantially cylindrical and contoured passage.

3. An electrical connector as claimed in claim 2, wherein:

said electrical contact means extends through a wall of said conductive body from an outside thereof, said end portion of said contact means being movable into and out of said recess.

4. An electrical connector as claimed in claim 3, wherein:

said recess is dimensioned in cross-section for the insulated portion of the conductor to be insertable therein with a minimum clearance between an exterior of the insulative layer and an surface of said recess.

sub C3
5. An electrical connector as claimed in claim 1, wherein:

said body defines a contact passage with internal threads;

said contact means includes an external screw thread for engaging said internal threads of said contact passage in the conductor receptacle, wherein rotation of the
5 contact means causes relative movement between said contact means and said body to cause said contact means end portion to protrude into said recess and make electrical connection with the insulated conductor positioned in said recess.

11
10
6. An electrical connector as claimed in claim 5, wherein:

said body includes a spring loaded block biased towards said recess;

said contact means engages said spring loaded block to bias said contact means against said conductor subsequent to insulation displacement.

2

7. An electrical connector as claimed in claim 1, wherein:

said contact means has means for movement relative to said body;

one of said contact means and said body includes means for biasing said contact means against said conductor.

sub
C-1

8. An electrical connector according to claim 1, wherein:

said end portion of said contact means includes an insulation cutting surface for displacing the insulative layer.

9. An electrical connector according to claim 1, wherein:

said end portion of said contact means is domed and smooth.

4
10. An electrical connector according to claim 1, wherein:

said contact means is formed as a screw threaded bolt having a substantially rounded end with a radially and axially extending cutting edge,

5
11. An electrical connector according to claim 1, wherein:

a jointing compound is provided on said end portion of said contact means.

sub
C-3

12. An electrical connector according to claim 1, wherein:

said contact means end portion has a cavity which is filled with jointing compound.

13. An electrical connector according to claims 9, wherein:

a jointing compound receiving cavity filled with jointing compound is positioned where said contact means engages said body to increase electrical contact.

13

14. An electrical connector according to claim 12, wherein:

an outer edge of said cavity serves as a cutting edge.

7

15. An electrical connector according to claim 1, wherein:

a plurality of angularly displaced contact means are positioned about said recess.

14

16. An electrical connector as claimed in claim 1, wherein:

said knife edged protrusion means are concavely part-circular when viewed in a lengthwise direction of extent of said recess.

16

17. An electrical connector as claimed in claim 16, wherein:

said knife-edged protrusion means are substantially semi-circular when viewed in the lengthwise direction of extent of said recess.

15

18. An electrical connector as claimed in claim 16, wherein:

said recess has a cross-sectional form of two opposed semi-circular portions interconnected by straight line portions, and with said knife-edged protrusion means

being disposed at one of said semi-circular portions;

5 said electrical contact means being arranged at another of said semi-circular portions.

¹⁷
19. An electrical connector as claimed in claim ¹⁶~~17~~, wherein:

said recess has a cross-sectional form of two opposed semi-circular portions interconnected by straight line portions, and with said knife-edged protrusion means being disposed at one of said semi-circular portions;

5 said electrical contact means being arranged at another of said semi-circular portions.

20. A method for making a connector body for an electrical connector making electrical connection to an electrical conductor sheathed by an insulative covering, the method comprising the steps of:

providing a body;

5 providing a cutting tool having a forward portion provided with end and side cutting teeth, said cutting tool including a following portion formed with teeth of a profile complementary to a form of protrusion means for insulation displacement and electrical connection on a side of the electrical conductor;

advancing said cutting tool into said body to cause said teeth on said forward portion
10 to cut a circular recess;

then moving said cutting tool sideways within the circular recess to elongate the circular recess and cause the teeth on the following portion to form said protrusions as

part-circular ridges.

21. A method for making an electrical connection to an insulated electrical conductor, the method comprising the steps of:

providing an electrically conductive body defining a recess for receiving an insulated portion of the electrical conductor, said recess having transversely extending integrally
5 formed knife-edged protrusions;

providing a contact means which is electrically coupled to the body and moveable relative to the body to enable an end portion thereof to protrude into said recess at a side opposite said protrusions;

inserting an insulated portion of an electrical conductor in said recess, and
10 displacing the contact means with respect to the body so as to penetrate the insulative layer of the insulated conductor portion and make electrical contact with the electrical conductor underneath, and to cause said knife-edged projections to also pierce the insulative layer to make contact with the electrical conductor.

22. An electrical connector for making electrical connection to an electrical conductor sheathed by an insulative covering, comprising:

a body having defining a recess for receiving an insulated portion of the electrical conductor; and

5 electrical contact means supported by the receptacle and moveable transversely

thereto the conductor when received in the recess, the contact means having an end portion adapted to pierce the insulative covering of said portion of the insulated conductor and make electrical connection to said conductor upon such transverse movement, said end portion of said electrical contact means being of domed form
10 substantially free of cutting edges.

23. An electrical connector as claimed in claim 22, wherein:

said end portion is provided with a jointing compound receiving cavity, having jointing compound therein.

Add
B 2

add
C 6